

## A NEW SUBGENUS OF *COELIOXYS* LATREILLE (HYMENOPTERA: APOIDEA: MEGACHILIDAE) FROM INDIA<sup>1</sup>

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(With five text-figures)

A new subgenus *Tropicocoelioxys* (Type-species: *Coelioxys* (*Tropicocoelioxys*) *genoconcavitus* sp. nov.) of genus *Coelioxys* Latreille has been proposed. The diagnostic characters of the new subgenus are given, as also its affinities to subgenus *Melanocoelioxys* Mitchell and the description of type-species; *genoconcavitus* sp. nov. has certain affinities with *C. confusus* Smith and *C. perseus* Nurse.

### *Tropicocoelioxys*<sup>3</sup> subgen. nov.

Type-species of the subgenus: *Coelioxys* (*Tropicocoelioxys*) *genoconcavitus* sp. nov.

**Diagnostic characters** Subocellar area deeply punctured, flat; occipital margin at vertex incurved and carinate; lateral ocelli close to the occipital margin; genae neither narrowed above or below, almost completely traversed with a deep elliptical densely pubescent concavity, margined all along with distinctly elevated carina, extending from near the upper margin of eye up to the hypostome below; first segment of labial palp about half that of second in length; scutum humped anteriorly; carina of pronotal tubercle not elevated but spinose towards lateral side; scutellar surface sparsely 'pitted', postero-median carina over projecting up to propodeum; axillae resembling scutellum in surfacial texture, spine short, do not cross the transverse line if drawn with the scutellar crest; concavity margin of basal tergum carinate; gradular groove on terga 2 and 3 interrupted medially or at the most quite shallow at mid line, bare; gradular groove on and tergites restricted laterally and distinctly margined anteriorly, with dense pubescence; in males fifth tergum with a preapical prominent spine at lateral extremities; 6th tergum with 4 acute spines at apex and 2 baso-lateral, all acutely produced; sternum 5 usually exposed.

The subgenus *Tropicocoelioxys* subgen. nov. reflects certain close relationship with Nearctic

*Melanocoelioxys* Mitchell (type-species: *C. toltteca* Cresson) in respect of – scutum anteriorly humped; sternum 5th in males exposed; scutellum with sparse punctures, crest usually produced over the metanotum and propodeum and subocellar area of face usually closely punctate and quite flat. However, the following characters of differentiation put both subgenera quite far and distinct – vertex margin slightly carinate; lateral ocelli equidistant from eyes and occipital margin; genae narrower than eye in lateral view, usually not constricted below in males and constricted on either side in females; genal area without concavity, at the most certain hypostomal excavation would be obscurely present; scutum smooth, impunctate medially; carina of pronotal tubercle prominently elevated; axillar dorsal surface compressed at spine and more or less recurved; concavity margin of basal tergum not carinate; foveal area of tergum 2 finely but deeply punctured; tergal grooves of all terga interrupted medially, distinctly fasciate and with defined anterior margin.

In Mitchell's key (1973, p. 28) to the subgenera of genus *Coelioxys* of the western hemisphere, subgenus *Tropicocoelioxys* can be suitably adjusted in between nos. 6 and 7 in close relationship to *Melanocoelioxys* Mitchell.

### *Coelioxys* (*Tropicocoelioxys*) *genoconcavitus*<sup>4</sup> sp. nov. (Figs. 1-5)

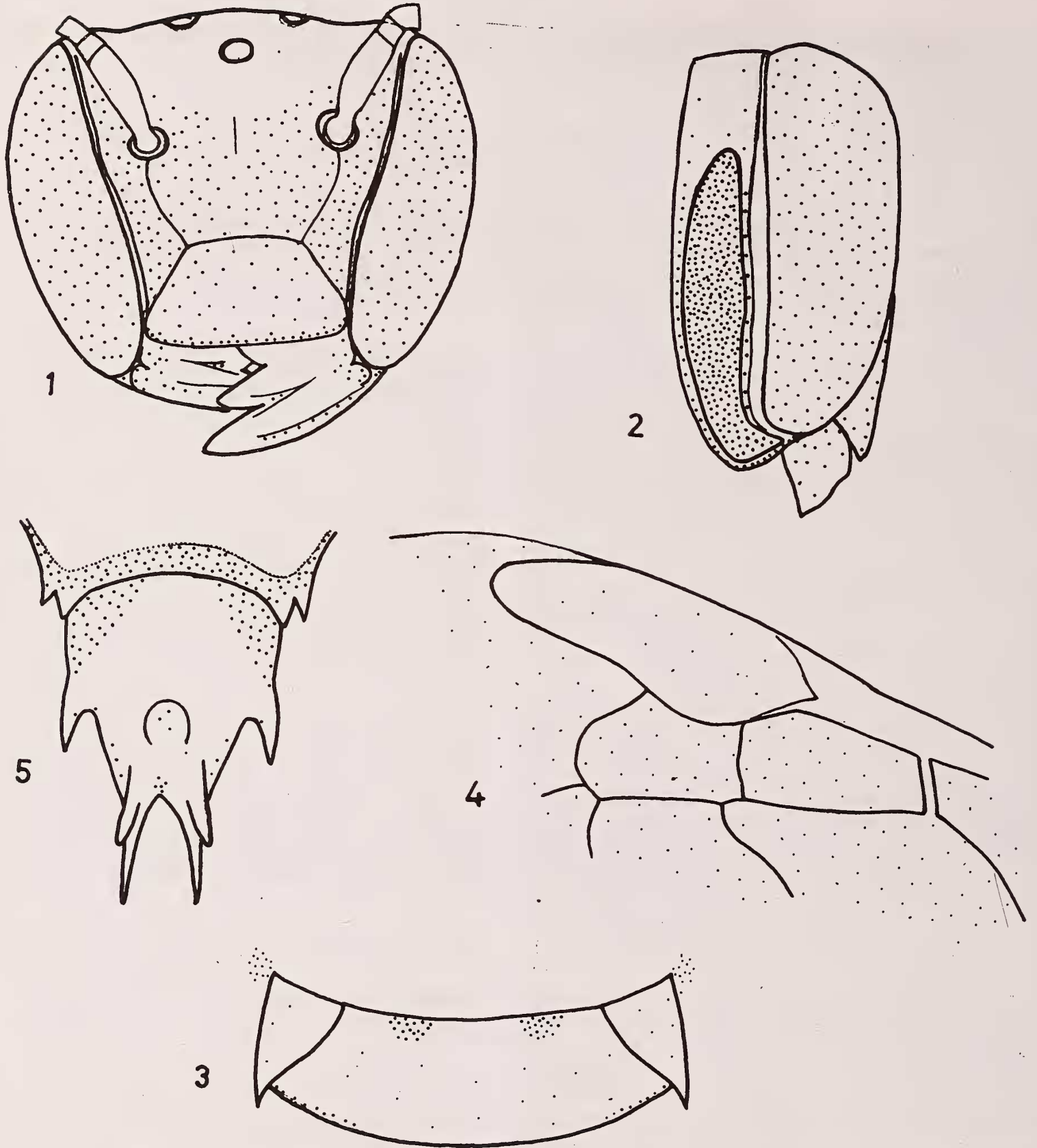
**MALE:** Integument black with redness; abdomen, legs, tegulae and antenna with much redness (variation: integument totally black, as those of paratypes); punctures coarse and deep; on face, legs, tegulae fine and closer and dorsally at

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<sup>3</sup>Named after its record from the tropics (south India).

<sup>4</sup>Named after the prominent concavity at Genae.



Figs. 1-5: *Coelioxys (Tropicocoelioxys) genoconcavitus* sp. nov. 1. Head, front view 2. Head, lateral view 3. Scutellum and axillae; 4. Fore wing, anterior venation 5. Tergum 6th, dorsal view (dots indicate pubescence).

metasoma deeper but closer and ventrally shallow and sparse.

Pubescence white to pale, tarsal fringe golden; apical fasceae on terga 2-5 complete, usually all erect except the tergal and sternal fasceae, where it is ferruginous. Head about twice as wide as median length; face densely hairy; eyes strong-

ly convergent below, hairy, inner margin with prominently elevated carina; clypeus flat, median length greater than basal width, apical margin transverse not angulated laterally and densely fringed; supraclypeus same as clypeus; parocular area deeply concave near antennal sockets; antennal sockets depressed dorso-laterally, equidistant



to each other, midocellus and clypeus, quite close to the eye margin; length of scape of antenna slightly greater than that of apical flagellar segment; subocellar area deeply punctured, flat with a fine midfacial line; lateral ocelli on slightly convex surface of vertex, distance to each other is less than to occipital margin and much less than to eye margin; occipital margin at vertex deeply incurved, depressed and strongly carinate; genal width less than eye width in lateral view, neither narrowed above or below, genal concavity broadly filling complete genal surface and with dense thick plumose hairs, not projecting beyond the carinate margins all around; occipital margin at gena distinctly carinate, carina of genal concavity and of occipital margin are distinctly separated by a deep but fine groove; excavated hypostomal area below genal concavity, transverse and with dense pubescence; mandibles red, tridentate, teeth quite robust, each with two prominent ridges running towards dentate margin; segment 2nd of labial palpi about twice that of first in length, joints of 2nd and angulated 3-4 with two coarse and two fine bristles; labrum almost equal in length and width.

Scutum slightly wider than median length, anteriorly humped; rest flat, deep punctures arranged in longitudinal striations, median and parapsidial lines fine but notaulices obscure; pronotal extensions below tegulae sharply carinate and terminate in an acute ridge, close to mesepisternal carina; mesepisternal carina (subdividing unsculptured anterior face with that of densely pubescent lateral face) itself is distinctly fasciate, followed by slightly bare longitudinal strip at lateral face of mesepisternite; scutellum sparsely 'pitted', posterior carina almost transverse, projecting completely over metanotum and propodeum, slightly upcurved medially; axillar surface resembling scutellum, spinose projection acute but short, not exceeding the transverse line if drawn at the level of scutellar crest; tegulae finely punctured and shining; forewings pale-hyaline, brownish near costal margin becoming pale fuscous towards apex, second recurrent vein is slightly further from base

than the first, which is quite close to the apex of the second cuboital cell; fore coxae with a prominent spine; apices of metatarsi and tarsi produced anteriorly in fore legs, rest of the legs normal and unmodified.

Basal tergal concavity margin completely carinate; gradular groove of 2nd and 3rd terga quite shallow, unshagreened, anterior margins not defined and much confined to lateral sides; on terga 4 and 5 gradular groove hairy and anteriorly defined; apical fasceae on terga 2 to 5 almost complete medially; rim areas on terga 4 and 5 quite wide; tergal foveae indistinct; tergum 5 with a prominently produced spine originating from the base of rim at extreme lateral sides; tergum 6 with 4 apical and 2 latero-basal spines, all acutely produced; apico-dorsal spines are slightly exceeded by their respective ventral pair in length, concavity medially at the base of dorsal spines quite deep; apical margin of terga 6 below deeply incurved and subapical surface shallowly concave in between the base of ventral pair of spines; 5 sternites exposed; first sternum acutely protuberant at base with a patch of hairs; sterna 1 and 2 with apical fasceae interrupted medially, rest with fasceae complete at their apical margins, rims slightly depressed on sterna 2 to 4; 5th sternite broadly evaginated medio-apically and densely pubescent.

Total length 9.0; median length and maximum width of face 1.8 and 3.5; F. wing length 7.0 (all in mm).

**Female:** Not known.

**Material Examined:** Holotype Male, Cubbon Park, Bangalore, 10 June 1981; Coll. Rajiv K. Gupta. Paratypes 2 Males (on 11 and 12 June 1981 from same locality). All types presently with author, shall be submitted to NPC, Entomology Division, IARI, New Delhi in due course of time.

*C. (T.) genoconcavitus* sp. nov. is very distinct from all the known Indian species of genus *Coelioxys*. Not only any Indian but neighbouring as well as far territorial species do not possess the remarkable character of genal concavity; at the most hypostomal excavations are known to exist in several species the world over. However, *C.*



*perseus* Nurse (collected from Mount Abu) and *C. confusus* Smith (on record from Lucknow, Mussoorie and Pusa) seem to be close relatives of *genoconcavitus* in respect of 6 spines on apical terga in addition to upturned scutellar crest with *perseus* and many subgeneric characters leading up to subgenus *Melanocoelioxys* of *confusus* (I consider *confusus* can be suitably grouped under *Melanocoelioxys*). The major features which distinctly separate *perseus* from the new species are - rounded scutellar crest, spine of 5th terga short and blunt; all metasomal terga with lateral extremities spinose; shining and bare scutellum; sternum 5th not exposed in males and lack of genal concavity at cheeks.

Comparatively, *confusus* is much more close to *genoconcavitus*. However, following charac-

ters distinctly separate the former species from the new one - hypostomal excavation confined to extreme ventral area; mandible tridentate but teeth not so prominently produced, inner angle subacute; clypeal apical margin with 5 fine tubercles, surface convex; scutellar crest broadly rounded, smooth, not upturned medially; all terga with complete apical fasciae and 5th sternum partially exposed, surface somewhat bare.

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#### REFERENCES

MITCHELL, T.B. (1973): A subgeneric revision of the bees of the genus *Coelioxys* of the Western Hemisphere. Contr.

Deptt. Entomol. North Carolina State Univ., N.C. Raleigh, 129 p.

## SOME NEW CHALCID PARASITOIDS (HYMENOPTERA:EULOPHIDAE) RECORDED FROM INDIA<sup>1</sup>

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(With thirty-five text-figures)

Two eulophid genera: *Ginsiella* Erdos and *Olynx* Foerster have been recorded for the first time from India. Four new species, viz. *Diglyphus indicus*, *D. frontolatus*, *Ginsiella indica* and *Olynx indicus* are described in detail. Type material has been deposited in Zoological Museum, Aligarh Muslim University, Aligarh.

### Genus *Diglyphus* Walker

*Diglyphus* Walker, 1844. Ann. Mag. Nat. Hist., 14: 409.

**Type-species:** *Cirrospilus chabrias* Walker, by monotypy.

There has been some confusion over the type species of the genus *Diglyphus*. Some publications carry the type-species as *D. poppaea* Walker, 1848. This error probably stems from the citation

of *D. poppaea* as the type-species by Ashmead (1904: 372) and listed again in Gahan and Fagan (1923-45).

Gordh and Hendrickson Jr. (1979) have solved the controversy over the confusion of its type species by citing the earlier work of Walker (1844). In this case Walker (1844) wrote, "*Diglyphus chabrias*, *Cirrospilus chabrias*, Ann. Nat. Hist. i. 451. Alten Finmark". This is the earliest reference Gordh and Hendrickson Jr. could find to this name and from the context of the remainder of Walker's article they have declared it as a new combination. Thus *Cirrospilus chabrias* Walker no doubt should be the type-species of *Diglyphus* by monotypy.

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